WHAT IS CLAIMED IS:

1. A multi-computer system, comprising a plurality of local nodes interconnected by a shared memory, each local node comprising

a local processor,

a local memory,

a local communications protocol stack, and

a shared memory interface system operable to provide a local shared memory network between the local nodes, and a global shared memory network between the local nodes and one or more remote nodes by capturing packets from the local communications protocol stacks and routing the captured packets over the shared memory.

2. The multi-computer system of claim 1, wherein the shared memory interface system on each local node comprises a local shared memory virtual adapter and a global shared memory virtual adapter;

the local shared memory virtual adapters being operable to capture locally addressed packets from the local communications protocol stacks and to route the captured packets for physical transport over the shared memory; and

the global shared memory virtual adapters being operable to capture globally addressed packets from the local communications protocol stacks and to route the captured packets for physical transport over the shared memory.

3. The multi-computer system of claim 2, wherein the local shared memory virtual adapters appear to the local communications protocol stacks as device drivers for physical network adapters connected to the local shared memory network, and the global shared memory virtual adapters appear to the local communications protocol stacks as device drivers for physical network adapters connected to the global shared memory network.

4. The multi-computer system of claim 2, wherein the global shared memory virtual adapters are responsive to a common global address for the global shared memory network.

5. The multi-computer system of claim 4, wherein the global shared memory virtual adapters are operable to capture from the local communications protocol stacks packets destined to a global network address and transmitted from a local network address.

6. The multi-computer system of claim 5, wherein the global shared memory virtual adapters are operable to route in-bound packets to other local nodes over the global shared memory network.

7. The multi-computer system of claim 6, wherein the shared memory interface system on each local node is operable to maintain in local memory a data structure identifying active local nodes connected to the global shared memory network.

8. The multi-computer system of claim 1, wherein one or more local nodes comprise one or more physical network adapters for connection to one or more remote nodes.

9. The multi-computer system of claim 8, wherein the shared memory interface system is operable to route packets to local nodes over the global shared memory network in accordance with an open shortest path first (OSPF) routing protocol.

10. The multi-computer system of claim 9, wherein local nodes comprising physical network adapters are configured as OSPF area border routers.

11. The multi-computer system of claim 10, wherein packets are routed over the global shared memory network preferentially to local nodes configured as OSPF area border routers.

12. The multi-computer system of claim 10, wherein OSPF cost metrics are set so that routes to OSPF area border routers are preferentially over the local shared memory network.

13. The multi-computer system of claim 1, wherein the shared memory interface system on each local node supports multicast and broadcast transmissions over the shared memory for the local shared memory network and the global shared memory network.

14. The multi-computer system of claim 13, wherein a broadcast ring structure and a multicast ring structure are allocated in shared memory for each of the local and global shared memory networks.

15. The multi-computer system of claim 14, wherein the broadcast ring structure and the multicast ring structure are reallocated to an active node in response to a failure of a local node originally allocating the broadcast ring structure or the multicast ring structure.

16. The multi-computer system of claim 1, wherein for each of the local and global shared memory networks a pair of transmit/receive ring structures are allocated in shared memory for each pair of local nodes.

17. The multi-computer system of claim 16, wherein each transmit/receive ring structure corresponds to a pre-allocated number of fixed size scribble buffers in shared memory.

18. The multi-computer system of claim 16, wherein the shared memory interface system on each local node is operable to allocate a transmit/receive ring structure in shared memory for each of the other local nodes.

19. The multi-computer system of claim 18, wherein the shared memory interface system on each local node is operable to connect to a transmit/receive ring structure allocated by a given node in response to receipt of a broadcast packet from the given node.

20. The multi-computer system of claim 19, wherein the shared memory interface system on each local node is operable to allocate a transmit/receive ring

structure for the given node in response to receipt of the broadcast packet from the given node.

21. The multi-computer system of claim 16, wherein a read pointer and a write pointer are associated with each transmit/receive ring structure.

22. The multi-computer system of claim 21, wherein a write pointer is modifiable only by a transmitting node and a read pointer is modifiable only by a receiving node.

23. The multi-computer system of claim 1, wherein the shared memory is implemented by a global shared memory facility, a distributed shared memory facility, or a logically shared memory facility.

24. A computer program residing on a computer-readable medium in a multi-computer system comprising a plurality of local nodes interconnected by a shared memory, each local node comprising a local processor, a local memory, and a local communications protocol stack, the computer program comprising computer-readable instructions for causing a computer to:

provide a local shared memory network between the local nodes, and a global shared memory network between the local nodes and one or more remote nodes by capturing packets from the local communications protocol stacks and routing the captured packets over the shared memory.

25. The computer program of claim 24, wherein the computer program comprises computer-readable instructions for causing a computer to capture from the local communications protocol stacks packets destined to a global network address and transmitted from a local network address.

26. The computer program of claim 25, wherein the computer program comprises computer-readable instructions for causing a computer to route in-bound packets to other local nodes over the global shared memory network.

27. The computer program of claim 26, wherein the computer program comprises computer-readable instructions for causing a computer to maintain in local memory a data structure identifying active local nodes connected to the global shared memory network.

28. The computer program of claim 27, wherein the computer program comprises computer-readable instructions for causing a computer to route packets to local nodes over the global shared memory network in accordance with an open shortest path first (OSPF) routing protocol.

29. The computer program of claim 28, wherein the computer program comprises computer-readable instructions for causing a computer to configure local nodes comprising physical network adapters as OSPF area border routers.

30. The computer program of claim 29, wherein the computer program comprises computer-readable instructions for causing a computer to route packets over the global shared memory network preferentially to local nodes configured as OSPF area border routers.

31. The computer program of claim 24, wherein the computer program comprises computer-readable instructions for causing a computer to allocate in shared memory a broadcast ring structure and a multicast ring structure for each of the local and global shared memory networks.

32. The computer program of claim 31, wherein the computer program comprises computer-readable instructions for causing a computer to reallocate the broadcast ring structure and the multicast ring structure to an active node in response to a failure of a local node originally allocating the broadcast ring structure or the multicast ring structure.

33. The computer program of claim 24, wherein, for each of the local and global shared memory networks, the computer program comprises computer-readable instructions for causing a computer to allocate in shared memory a pair of transmit/receive ring structures for each pair of local nodes.

34. The computer program of claim 33, wherein each transmit/receive ring structure corresponds to a pre-allocated number of fixed size scribble buffers in shared memory.

35. The computer program of claim 33, wherein the computer program comprises computer-readable instructions for causing a computer to allocate a transmit/receive ring structure in shared memory for each of the other local nodes.

36. The computer program of claim 35, wherein the computer program comprises computer-readable instructions for causing a computer to connect to a transmit/receive ring structure allocated by a given node in response to receipt of a broadcast packet from the given node.

37. The computer program of claim 36, wherein the computer program comprises computer-readable instructions for causing a computer to allocate a transmit/receive ring structure for the given node in response to receipt of the broadcast packet from the given node.

38. A method of processing packets in a multi-computer system comprising a plurality of local nodes interconnected by a shared memory, each local node comprising a local processor, a local memory, and a local communications protocol stack, the method comprising:

providing a local shared memory network between the local nodes, and a global shared memory network between the local nodes and one or more remote nodes by capturing packets from the local communications protocol stacks and routing the captured packets over the shared memory.